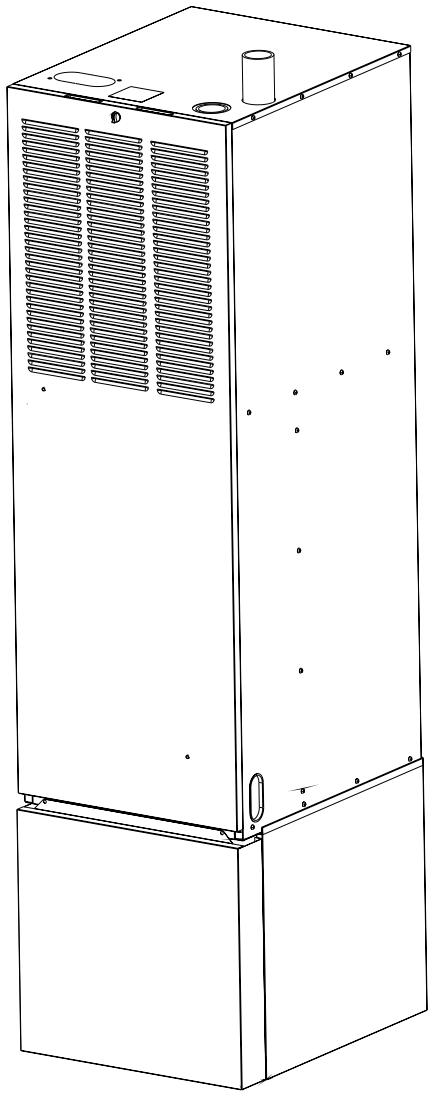
User's Information / Maintenance and Service Manual

M3RL Series Furnaces



⚠ WARNING:

FIRE OR EXPLOSION HAZARD
Failure to follow safety warnings exactly could result in serious injury death or property damage.

– Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

– WHAT TO DO IF YOU SMELL GAS
- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Leave the building immediately.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

– Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

⚠ ADVERTISSEMENT:

RISQUE D'INCENDIE OU D'EXPLOSION
Le non-respect des avertissements de sécurité pourrait entraîner des blessures graves, la mort ou des dommages matériels.

– Ne pas entreposer ni utiliser de l'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil, ni de tout autre appareil.

– QUE FAIRE S'IL Y A UNE ODEUR DE GAZ
- Ne pas tenter d'allumer aucun appareil.
- Ne toucher à aucun interrupteur électrique; n'utiliser aucun téléphone dans le bâtiment.
- Évacuer l'immeuble immédiatement.
- Appeler immédiatement le fournisseur de gaz en employant le téléphone d'un voisin. Respecter à la lettre les instructions du fournisseur de gaz.
- Si personne ne répond, appeler le service des incendies.

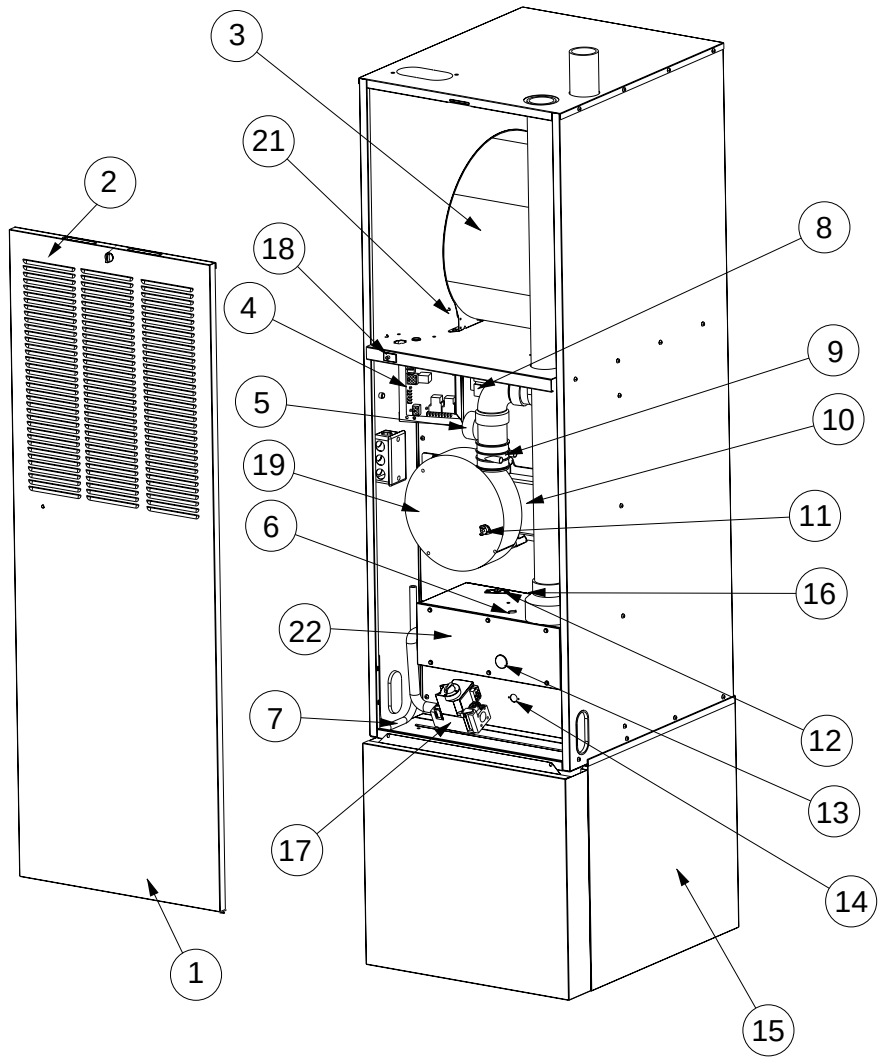
– L'installation et l'entretien doivent être effectués par un installateur qualifié, un organisme de service ou le fournisseur de gaz.

⚠ IMPORTANT:

Read this owner information thoroughly before attempting to operate or maintain this furnace to become familiar with the capabilities and use of your heating appliance. Keep this with literature on other appliances where you have easy access to it in the future. If a problem occurs, check the instructions and follow recommendations given. If these suggestions don't eliminate your problem, call your NORDYNE Servicing Contractor (Service PRO).

Any additions, changes, or conversions required in order for the appliance to satisfactorily meet the application needs must be made by a qualified installer, service agency, or the gas supplier using factory specified and approved parts.

M3 Downflow Furnace



1	Door Assembly	12	Igniter Assembly
2	Filter (Inside Door)	13	Burner View Port
3	Blower Assembly	14	Main Limit Switch
4	Control Board	15	Coil Cabinet Assembly (Optional)
5	Pressure Switch	16	Flame Sensor (On Burner Box)
6	Flame Rollout Switch	17	Gas Valve
7	"J" Trap Hard Tube	18	Switch, Blower Door
8	Low Voltage Transformer	19	Blower, Inducer
9	In Line Drain Assembly	20	Orifice (In Burner Box)
10	Front Header Box	21	Aux. Limit
11	Vent Safety Switch	22	Burner Box

Figure 1. Location of Major Components

GENERAL INFORMATION

This furnace has been designed and built to provide many years of safe and dependable home comfort, providing it is properly installed and maintained. With regular maintenance, this furnace will operate satisfactorily year after year. Abuse, improper use, and/or improper maintenance can shorten the life of the appliance and create hazards for you. Please read this manual carefully to familiarize yourself with operation, maintenance, and safety procedures for this furnace.

A regular service and maintenance schedule should be established to ensure efficient and safe operation of the furnace. See Section 5 for maintenance procedures and schedules.

Devices attached to the flue or vent for the purpose of reducing heat loss up the chimney have not been tested and have not been included in the design certification of this furnace. We, the manufacturer, can not and will not be responsible for injury or damage caused by the use of such untested and/or uncertified devices, accessories, or components.

⚠ WARNING:

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- **Before servicing, disconnect all electrical power to furnace.**
- **When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.**
- **Verify proper operation after servicing.**

⚠ WARNING:

To avoid possible equipment damage, fire, or death, the following instructions must be observed regarding furnace location, combustion air requirements, and operation procedures.

Inspect the furnace installation to ensure that the vent and combustion air intake pipes have been installed properly.

ABOUT YOUR CENTRAL FURNACE SYSTEM

NORDYNE has been involved in the design of products for the manufactured home industry since the first manufactured home or trailer was built.

NORDYNE originated the sealed combustion system, which separates the furnace combustion system from the living area of the home and is now a standard for the manufactured home industry.

NORDYNE engineers developed the first central heating system and the first central air conditioner for manufactured homes.

NORDYNE is dedicated to bringing to its customers the finest heating and cooling comfort possible. NORDYNE constantly seeks to further refine its products to continuously provide exceptional comfort.

Follow the instructions in this booklet carefully and this appliance will provide many years of superior performance.

If you wish to cool your home automatically with a central air conditioning system investigate the excellent NORDYNE cooling systems available from your heating and cooling contractor. These systems are designed to work best with your NORDYNE furnace and have been carefully engineered to deliver optimal performance when mated with NORDYNE manufactured home furnaces.

NORDYNE also offers water heaters, fireplaces and ventilating systems specifically designed for manufactured housing applications. Ask your manufactured home retailer, your heating and cooling contractor, or your distributor for more information. Write directly to the factory (PO Box 46911, St. Louis, MO 63146) if you are unable to locate a source for NORDYNE manufactured housing products in your area.

1. Furnace Location

The furnace area and the vicinity of any other gas appliance must be kept clear and free of combustible materials, gasoline, and other flammable vapors and liquids. Do not store or use flammable items such as paint, varnish, or strippers in the vicinity of the furnace.

Do not use the furnace closet or area next to the furnace as a storage area. This area must be kept clear, clean, and free of lint. The furnace must also be kept clear of loose or exposed insulation materials. Examine the furnace area when the furnace is installed or when insulation is added. Some insulation materials may be combustible.

Do not use this furnace if any part has been under water. Immediately call a qualified service technician to inspect the furnace and to replace any part of the control system and any gas control which has been under water.

Familiarize yourself with the controls that shut off the gas and electrical power to the furnace. If the furnace is to be shut down for an extended period of time, turn off both the gas and electrical power. For your safety always turn off both the gas and electrical power before performing service or maintenance on the furnace.

2. Combustion Air Supply

A furnace needs an adequate supply of combustion and ventilation air for proper and safe operation. Follow the installation instructions included with the furnace to properly vent air to the combustion air inlet and exhaust the products of combustion to the outside from the exhaust vent.

If the furnace is operated with a restricted combustion air supply, the pressure switch will open, turning off the gas supply to the burners. (See Figure 1). **DO NOT** install a jumper wire across this switch to defeat its function. If this switch must be replaced, use only authorized replacement parts from your authorized distributor.

If the furnace is operated with inadequate combustion air supply, due to sooting of the heat exchanger, or partial blockage of the vent or air intake pipe, the flame roll-out control switch located above the burners may open, turning off the gas supply to the burners. The flame roll-out control is a manually resettable device (See Figure 1). If the flame roll-out control opens again after once reset, **DO NOT** install a jumper wire across this switch to defeat its function. **DO NOT** reset the control without identifying and correcting the fault condition which caused the control to trip. If this switch must be replaced, use only authorized replacement parts from your authorized distributor.

Air openings in warm air registers, and return air grilles must not be restricted.

⚠ CAUTION:

Combustion air must not be drawn from occupied spaces.

To maximize heat exchanger life, the combustion air must be free of chemicals which form corrosive acidic compounds in the combustion gases. Some examples of these chemicals are chlorine, fluorine, and sulphur. Some common sources of these chemicals are detergents, bleaches, aerosol sprays, cleaning solvents, and a wide variety of commercial and household products.

3. Return Air Supply

For M3 models, the return air opening is located at the front of the furnace. The floor or platform on which the furnace is mounted must provide sound physical support of the furnace with no gaps, cracks, or sagging between the furnace and floor or platform. The circulating air ductwork must not be connected to any other heat producing device such as a fireplace insert, stove, etc. Doing so may result in fire, explosion, personal injury, carbon monoxide poisoning, or property damage.

Use an air filter in the front door to maintain a clean heat exchanger.

⚠ WARNING:

Failure to prevent products of combustion from being circulated into the living space can create potentially hazardous conditions including carbon monoxide poisoning that could result in personal injury or death.

4. Vent System

The furnace must always be connected to an approved vent pipe to carry the furnace combustion products outdoors. At the beginning and end of each heating season, inspect the outdoor vent terminal closely with a flashlight to determine if any of the conditions listed under the following warning exist.

5. Maintenance

Proper maintenance is most important to achieve the best performance from this furnace and should be performed by a qualified service technician. Follow the maintenance schedule (see Table 1) and the following instructions for years of safe, trouble free operation.

- **Do not place combustible materials on or against the furnace cabinet.**
- **Do not store gasoline or any other flammable vapors and liquids in the vicinity of the furnace.**
- **Annually inspect the furnace, ductwork, and vent system for signs of physical deterioration.**
- **Change or replace the air filters monthly during any period when the circulating blower is operating regularly.**
- **Always replace the doors on the furnace after servicing or cleaning/changing the filters. Do not operate the furnace without all doors and covers in place, except to check burner operation.**
- **Avoid operating the furnace when windows and doors are open.**
- **Be sure that the thermostat is properly installed and is not being affected by drafts or heat from lamps or other appliances.**

⚠ WARNING:

Never operate the furnace without a filter in place. Dust and lint in the return air can build up on the internal components, resulting in a loss of efficiency, equipment damage, and possible fire.

Air Filter — An air filter is supplied with the furnace as shipped from the factory. The filter must be removed and cleaned monthly during the heating season to ensure proper furnace operation. The filter is easily cleaned with soap water or with vacuum cleaner. New or newly renovated homes may require more frequent changing until the construction dust has been removed.

Always replace the filter with a filter of the same size and type as the filter being removed.

Always replace the door(s) on the furnace after servicing or cleaning/changing the filters. Do not operate the furnace without the door(s) in place.

To clean or replace the filters, proceed as follows: (See Figure 2).

1) Turn furnace electrical supply to OFF.
2) Remove furnace main door.
3) Release filter retainer wire.
4) Pull out filter.
5) Vacuum or wash filter with soap water and allow to dry.
6) Place filter and retainer wire in door.

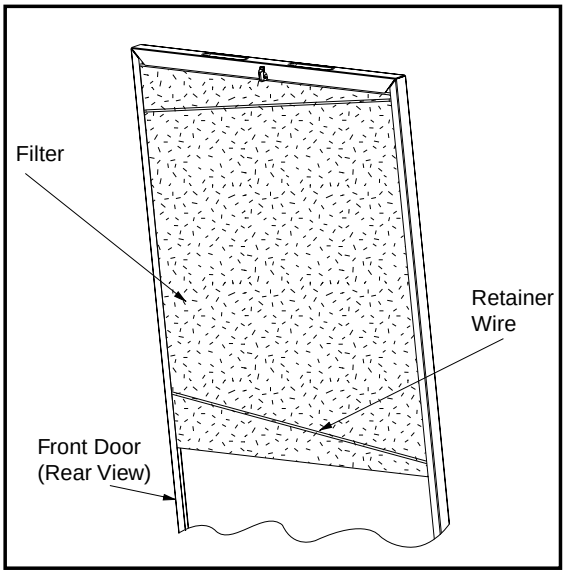


Figure 2. Filter Installation

Lubrication — The bearings in the circulating air blower motors used in these furnaces are pre-lubricated and sealed at the factory. No further oiling of the bearings is required for the life of the motor.

Blower Compartment — The blower compartment should be cleaned monthly during the heating and cooling seasons to remove any dirt and lint that may have accumulated in the compartment or on the blower and motor. Buildup of dirt and lint on the blower and motor can create excessive loads on the motor resulting in higher than normal operating temperatures and possible shortened service life.

Burner Maintenance — Check the burner flames at the start of every heating season. Set the thermostat to a temperature setting above the room temperature. Remove the front door from the furnace, close the door switch (see Figure 1), and visually inspect the burner through the view hole to make sure that the flame is drawn into the center of the heat exchanger tube (see Figure 3). In a properly adjusted burner assembly, the flame bends up at the end of the heat exchanger tube, and the end of the flame will be out of sight around the bend. The flame color should be blue, however some light yellow streaks may occur on the outer portions of the flame.

⚠ CAUTION:

Some components in the burner vestibule are at high temperatures while the burners are operating. Use caution to avoid personal injury.

Inspect the burners, mounting brackets, and all other parts in the vestibule for signs of deterioration. The burner vestibule should be vacuumed clean and inspected annually. Open the door switch and replace the front door.

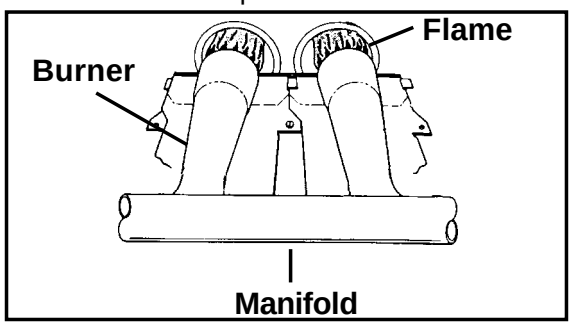


Figure 3. Burner Inspection

⚠ CAUTION:

Do not strike any of the internal electrical components while vacuuming.

6. Operating Instructions

READ THE SAFETY INFORMATION ON PAGE 8 BEFORE OPERATING.

⚠ WARNING

Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the furnace before shutting off the electrical supply.

⚠ ADVERTISSEMENT:

En cas de température excessive, ou s'il est impossible de couper l'alimentation en gaz, fermer le robinet manuel d'alimentation en gaz du générateur d'air chaud avant de couper l'alimentation électrique.

These furnaces are equipped with roll-out limit switch(s), a vent safety switch, and a pressure switch (See Figure 1). The pressure switch verifies that the flame is receiving combustion air. If the flame is not drawn into the heat exchanger tube, the roll out limit switch or flame sensor, will shut the furnace down.

The vent safety switch shuts the furnace down if the vent becomes blocked or restricted.

Furnace Fails To Operate — If the furnace does not operate, check the following:

1) Is the thermostat operating properly?
2) Is the front door in place?
3) Is the furnace disconnect closed?
4) Has the circuit breaker tripped (or fuse blown)?
5) Is the gas turned on?
6) Is the filter dirty or plugged?

If the combustion and circulating air blowers are operating, and items 1 through 6 have been

checked without identifying the cause of the problem, press the red reset buttons on the vent safety and the roll out limit switches. (See Fig-ure 1).

I**MPORTANT: If the furnace operates after depressing the reset button on the vent limit or roll out limit, it is an indication of a potentially serious problem in the installation. Follow the instructions "To Turn Off Gas To the Appliance" located in these instructions or on the door of the furnace. Contact a qualified serviceman to identify and repair the problem.**

MANUFACTURER WARRANTY, OWNER RESPONSIBILITIES

It is the sole responsibility of the homeowner to make certain the gas furnace has been correctly set up and adjusted to operate properly.

NORDYNE warrants this furnace to be free from defects in material or workmanship for a period of one year. A warranty certificate with full details is included with this document. However, NORDYNE will not be responsible for any costs found necessary to correct problems due to improper setup, improper installation, furnace adjustments, improper operating procedure on the part of the user, etc.

Some specific examples of service calls which cannot be included in warranty payments are:

1. Converting the furnace to use another type of gas.
2. Repairing duct work in the home found to be faulty.
3. Correcting wiring problems in the electrical circuit supplying the furnace.
4. Resetting circuit breakers, blown fuses or other switches.
5. Correcting problems due to improper gas supply pressure to the furnace.
6. Providing instructional training on how to light and operate the furnace.
7. Correcting any problems caused by installation of an air conditioner, heat pump or other air comfort devices.
8. Revising installation of the furnace flue assembly.
9. Adjusting or calibrating of thermostat.
10. Removing any construction debris which has fallen into flue system.

Carefully review these responsibilities with your dealer, service company, or gas supplier so there will be no misunderstanding at a later time.

Read Your Warranty

Please read your limited warranty completely. It contains valuable information about your furnace. If you have any questions about the warranty information, contact your NORDYNE distributor.

MAINTENANCE ITEM	FREQUENCY OF MAINTENANCE		
	BEGINNING OF EACH HEATING SEASON	END OF EACH HEATING SEASON	MONTHLY
VERIFY FURNACE AREA IS FREE OF COMBUSTIBLE MATERIALS	X	X	X
VERIFY COMBUSTION AND VENTILATION AIR IS NOT RESTRICTED	X	X	X
VERIFY NO SIGNS OF PHYSICAL DETERIORATION OF THE FURNACE	X	X	X
VERIFY NO OBSTRUCTIONS OR RESTRICTIONS IN VENT OR CHIMNEY	X	X	
VERIFY NO HOLES OR CRACKS IN VENT PIPE	X	X	
VERIFY NO CORROSION IN VENT PIPE	X	X	
VERIFY THAT HORIZONTAL VENT PIPES SLOPE UPWARDS AWAY FROM FURNACE	X	X	
VERIFY BURNER FLAME	X		
CLEAN OR REPLACE FILTER(S)			X
CLEAN BLOWER COMPARTMENT			X
CLEAN BURNER ASSEMBLY	X		

Table 1. Maintenance Table

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.

B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or move by hand, do not try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

POUR VOTRE SÉCURITÉ. À LIRE AVANT L'EMPLOI

ATTENTION! L'inobservation de ces instructions peut entraîner un incendie ou une explosion pouvant causer des dammages à votre propriété à votre personne, ou la mort.

A. Cet appareil ménager n'a pas de veilleuse. Il est doté d'un système d'allumage automatique. Ne pas essayer d'allumer le brûleur manuellement.

B. AVANT L'USAGE. Attention à une possible odeur de gaz surtout au niveau du plancher où les gaz les plus lourds ont la tendance de se concentrer.

EN CAS D'ODEUR DE GAZ.

- Ne mettre en marche aucun appareil électrique.
- Ne toucher à aucun commutateur électrique, ne pas employer le téléphone.
- Quitter le bâtiment immédiatement et avertir la compagnie du gaz en utilisant le téléphone d'un voisin.
- A défaut de la compagnie du gaz, avertir le service des pompiers.

C. Enfoncer ou faire tourner le robinet à gaz à la main seulement. Ne jamais utiliser d'outils. S'il n'est pas possible de faire tourner ou d'enfoncer le robinet à la main, ne pas essayer de le réparer. Faire appel à un spécialiste. Forcer ou tenter de réparer le robinet pourrait être à l'origine d'une explosion ou d'un incendie.

D. Il est déconseillé d'utiliser cet appareil en contact prolongé avec l'eau. Faire inspecter ou remplacer toute commande par un technicien qualifié si un des systèmes de contrôle du gaz s'est trouvé sous l'eau.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above on this label.
2. Set the thermostat to the lowest setting.
3. Turn off all electrical power to the appliance.
4. The appliance's ignition device automatically lights the burner. Do not try to light burner by hand.
5. Remove the control access door/panel (upper door if two-door model).
6. Move the gas control knob clockwise ↷ to "OFF". (See Figure 2)
7. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in above information. If you don't smell gas, go to the next step.
8. Move the gas control knob counterclockwise ↶ to "ON".(See Figure 2)
9. Replace the control access door/panel (upper door if two-door model).
10. Turn on all electrical power to the appliance.
11. Turn the thermostat to desired setting.
12. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.

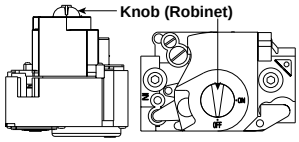


Figure 2

MODE D'EMPLOI

1. **ATTENTION!** Lire d'abord la liste des mesures de sécurité cidessus.
2. Mettre le thermostat à la position minimale.
3. Couper le courant électrique qui mène à l'appareil.
4. Cet appareil ménager étant doté d'un système d'allumage automatique, ne pas essayer d'allumer le brûleur manuellement.
5. Retirer le panneau/volet d'accès de commande (panneau supérieur s'il s'agit d'un modèle à deux panneaux).
6. Faire tourner le robinet à gaz dans le sens des aiguilles d'une montre ↷ pour l'amener sur la position OFF (Arrêt) (Voir Figure 2).
7. Attendre cinq (5) minutes pour s'assurer de la dissipation du gaz. En cas d'odeur, ARRÊTER LE PROCÉDÉ. Suivre les instructions ci-dessus (Section B). En l'absence de toute odeur de gaz, avancer à l'étape suivante.
8. Faire tourner le robinet à gaz dans le sens inverse des aiguilles d'une montre ↶ pour l'amener sur la position ON (Marche) (Voir Figure 2).
9. Remettre le panneau/volet d'accès de commande en place (panneau supérieur s'il s'agit d'un modèle à deux panneaux).
10. Rebrancher l'appareil sur le réseau électrique.
11. Ajuster le thermostat à la position désirée.
12. Si l'appareil ne fonctionne pas, suivre les "Directives d'arrêt" cidessous et appeler le technicien de service.

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to the lowest setting.
2. Turn off all electrical power to the appliance if service is to be performed.
3. Remove the control access door/panel (upper door if two-door model).
4. Move the gas control knob clockwise ↷ to "OFF". Do not use force. (See Figure 2)
5. Replace the control access door/panel (upper door if two-door model).

DIRECTIVES D'ARRÊT

1. Mettre le thermostat à la position minimale.
2. Débrancher l'appareil en prévision de la réparation.
3. Retirer le panneau/volet d'accès de commande (panneau supérieur s'il s'agit d'un modèle à deux panneaux).
4. Faire tourner le robinet à gaz dans le sens des aiguilles d'une montre ↷ pour l'amener sur la position OFF (Arrêt) Ne pas forcer (Voir Figure 2).
5. Remettre le panneau/volet d'accès de commande en place (panneau supérieur s'il s'agit d'un modèle à deux panneaux).

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EFFICIENCY RATING CERTIFIED Gama

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